PLAYER TRACKING COMMUNICATION MECHANISMS IN A GAMING MACHINE

BACKGROUND OF THE INVENTION

This invention relates to game playing methods for gaming machines such as video slot machines and video poker machines. More particularly, the present invention relates to methods and apparatus for providing player tracking services on a gaming machine.

There are a wide variety of associated devices that can be connected to a gaming machine such as a slot machine or video poker machine. Some examples of these devices are player tracking units, lights, ticket printers, card readers, speakers, bill validators, ticket readers, coin acceptors, display panels, key pads, coin hoppers and button pads. Many of these devices are built into the gaming machine or components associated with the gaming machine such as a top box which usually sits on top of the gaming machine.

Typically, utilizing a master gaming controller, the gaming machine controls various combinations of devices that allow a player to play a game on the gaming machine and also encourage game play on the gaming machine. For example, a game played on a gaming machine usually requires a player to input money or indicia of credit into the gaming machine, indicate a wager amount, and initiate a game play. These steps require the gaming machine to control input devices, including bill validators and coin acceptors, to accept money into the gaming machine and recognize user inputs from devices, including touch screens and button pads, to determine the wager amount and initiate game play.

After game play has been initiated, the gaming machine determines a game outcome, presents the game outcome to the player and may dispense an award of some type depending on the outcome of the game. A game outcome presentation may utilize many different visual and audio components such as flashing lights, music, sounds and graphics. The visual and audio components of the game outcome presentation may be used to draw a players attention to various game features and to heighten the players interest in additional game play. Maintaining a game player's interest in game play, such as on a gaming machine or during other gaming activities, is an important consideration for an operator of a gaming establishment.

One related method of gaining and maintaining a game player's interest in game play are player tracking programs which are offered at various casinos. Player tracking programs provide rewards to players that typically correspond to the player's level of patronage (e.g., to the player's playing frequency and/or total amount of game plays at a given casino). Player tracking rewards may be free meals, free lodging and/or free entertainment. These rewards may help to sustain a game player's interest in additional game play during a visit to a gaming establishment and may entice a player to visit a gaming establishment to partake in various gaming activities.

In general, player tracking programs may be applied to any game of chance offered at a gaming establishment. In particular, player tracking programs are very popular with players of mechanical slot gaming machines and video slot gaming machines. In a gaming machine, a player tracking program is implemented using a player tracking unit installed in the gaming machine and in communication with a remote player tracking server. Player tracking units are usually manufactured as an after-market device separate from the gaming machine. Many different companies manufacture player tracking units as part of player tracking/accounting systems. These player tracking/accounting systems are used in most casinos. Most casinos utilize only one type of player tracking system (i.e. from one manufacturer) while the type of player tracking system varies from casino to casino.

An example of a hardware and/or software implementation of a player tracking system with respect to a number of gaming machines is described as follows. FIG. **1** is a block diagram of a number of gaming machines with player tracking units connected to servers providing player tracking services. In casino **150**, gaming machines **100**, **101**, **102** and **103** are connected, via the data collection unit (DCU) **106** to the player tracking/accounting server **120**. The DCU **106**, which may be connected to up to 32 player tracking units as part of a local network in a particular example, consolidates the information gathered from player tracking units in gaming machines **100**, **101**, **102** and **103** and forwards the information to the player tracking account server **120**. The player tracking account server is designed 1) to store player tracking account information, such as information regarding a player's previous game play, and 2) to calculate player tracking points based on a player's game play that may be used as basis for providing rewards to the player.

In gaming machine **100** of casino **150**, a player tracking unit **107** and slot machine interface board (SMIB) **105** are mounted within a main cabinet **8** of the gaming machine. A top box **6** is mounted on top of the main cabinet **8** of the gaming machine. In many types of gaming machines, the player tracking unit is mounted within the top box **6**. Usually, player tracking units, such as **107**, and SMIBs, such as **105**, are manufactured as separate units before installation into a gaming machine, such as **100**.

The player tracking unit **107** includes three player tracking devices, a card reader **24**, a key pad **22**, and a display **16**, all mounted within the unit. The player tracking devices are used to input player tracking information that is needed to implement the player tracking program. The player tracking devices may be mounted in many different arrangements depending upon design constraints such as accessibility to the player, packaging constraints of a gaming machine and a configuration of a gaming machine. For instance, the player tracking devices may be mounted flush with a vertical surface in an upright gaming machine and may be mounted flush or at a slight angle upward with a horizontal in a flat top gaming machine.

The player tracking unit **107** communicates with the player tracking server via the SMIB **105**, a main communication board **110** and the data collection unit **106**. The SMIB **105** allows the player tracking unit **107** to gather information from the gaming machine **100** such as an amount a player has wagered during a game play session. This information may be used by the player tracking server **120** to calculate player tracking points for the player. The player tracking unit **107** is usually connected to the master gaming controller **104** via a serial connection using a wire serial connector and communicates with the master gaming controller **104** using a serial communication protocol. The serial connection between the SMIB **105** and the master gaming controller **104** may be through the main communication board **110**, through another intermediate device or through a direct connection to the master gaming controller **104**. In general, communication between the various gaming devices is provided using wire connectors with proprietary communication protocols. As an example of a proprietary serial communication protocol, the master gaming controller